

Remarks

In his office action dated July 16, 2004, Examiner stated the following objections and rejections:

1. Figures 2 and 4 should be designated as Prior Art because only those which are old are illustrated.
2. Figures 2, 5, and 6 are objected to because the figures show "a summing point wherein signal 225 must show '+' sign, and signal 215 '-' sign.
3. The Figures fail to show every feature of claim 45. Claim 45 recites "a plurality of digital to analog encoders and decoders, and an echo canceller device". According to the Examiner, this is not shown.
4. The Figures fail to show every feature of claims 1, 20, 39, 44, 45, and 46. According to the Examiner, claim 1 recites the limitation "a plurality of second coefficients having a start coefficient and an end coefficient...by applying at least one threshold value..." in lines 11-14. Examiner further states the claimed feature, namely, "generating a plurality of second coefficients out of the first coefficients using low-end and high-end thresholds" is not shown. A similar thing holds for claims 20, 39, 44, 45, and 46.
5. An equation on page 9 of the specification is in error.
6. Claims 20, 45, and 46 are objected to because, according to the Examiner, the term "first coefficients" should be replaced with the term "second coefficients".
7. Claims 1-44 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 5,473,686 in view of U.S. Patent No. 6,654,623.
8. Claim 45 is rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 6,724,736 in view of U.S. Patent Nos. 5,473,686 and 6,654,623.
9. Claim 46 is rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 6,266,367 in view of U.S. Patent Nos. 5,473,686 and 6,654,623.

Applicant has addressed each of the objections and

rejections below:

1. Figures 2 and 4 should be designated as Prior Art because only those which are old are illustrated.

Applicant respectfully disagrees. The application expressly states that the figures are intended to represent systems that use the novel filters of the present invention.

Specifically, while filters are generally known, the adaptive filter of Figure 2 is disclosed as using the novel methods and systems of the present invention. See Page 5, Line 7 ["Fig. 2 is a block diagram of one embodiment of the novel adaptive filter system.]. On page 6 of the specification, applicant uses Figure 2 to provide the reader with an understanding of the context of its invention and goes to describe how the filter 210 of figure 2 is novel. If forced to label Figure 2 as prior art, it would create the erroneous impression, when read with the specification, that applicant believes its novel adaptive filter is part of the prior art, thereby undermining the objective and purpose of this application.

Similarly, Figure 4 is intended to represent a network that uses the novel methods and systems of the present invention. See page 16, lines 27-30 ["The above-described novel adaptive filter methods and systems can be effectively deployed in a telecommunications system in the form of novel echo cancellation methods and systems to effectuate high quality communications, particularly as between users of a public switched telephone network (PSTN) and users of a packet-based network (e.g., the Internet)."] The specification goes on to particularly describe the elements shown in Figure 4. If forced to label Figure 4 as prior art, it would create the erroneous impression, when read with the specification, that applicant believes its novel adaptive filter is part of the prior art, thereby undermining the

objective and purpose of this application. Applicant requests the Examiner withdraw these objections.

2. Figures 2, 5, and 6 are objected to because the figures show "a summing point wherein signal 225 must show '+' sign, and signal 215 '-' sign."

Applicant respectfully disagrees. Applicant does not understand how Examiner reached the conclusion that the invention is limited to each signal having a specific positive or negative value. One of ordinary skill in the art would appreciate that signal 215 is removed from signal 225, regardless of which signal has a positive or negative value. The inclusion of such detail in the drawings is not required by the MPEP and does not represent an erroneous technical representation of the invention. Applicant requests the Examiner withdraw this objection.

3. The Figures fail to show every feature of claim 45. Claim 45 recites "a plurality of digital to analog encoders and decoders, and an echo canceller device". According to the Examiner, this is not shown.

Applicant has amended claim 45 to remove the limitation "a plurality of digital to analog encoders and decoders". Applicant asserts that the figures do show every feature of the remaining limitations, including the gateway operative to transmit signals between a circuit switched network and a packet based network (Figure 4) and the echo cancellation device (Figures 5 and 6). Applicant requests the Examiner withdraw this objection.

4. The Figures fail to show every feature of claims 1, 20, 39, 44, 45, and 46. According to the Examiner, claim 1 recites the limitation "a plurality of second coefficients having a start coefficient and an end coefficient...by applying at least one threshold value..." in lines 11-14. Examiner further states the claimed feature, namely, "generating a plurality of second coefficients out of the first coefficients using low-end and high-end thresholds" is not shown. A similar thing holds for claims 20, 39, 44, 45, and 46.

Applicant believes Examiner's objections are in error. All features of claims 1, 20, 39, 44, 45 and 46 are shown in Figure 3, particularly "second coefficients" (370, 380) and "threshold value" (340). The limitation of "low-end and high-end thresholds" is not in any of claims 1, 20, 39, 44, 45 or 46.

5. An equation on page 9 of the specification is in error.

On page 9, lines 17-20, the current application discloses the following equation:

$$E = \sum_{i=0}^{N-1} | \underline{\bar{w}}_i |$$

Applicant has amended the current application by including a square of the absolute value (underlined) in the equation, as follows:

$$E = \sum_{i=0}^{N-1} | \underline{\bar{w}}_i |^2$$

6. Claims 20, 45, and 46 are objected to because, according to the Examiner, the term "first coefficients" should be replaced with the term "second coefficients".

Applicant respectfully disagrees. In at least one embodiment, the present invention claims the generation of second coefficients, the use of the second coefficients to create a filtered signal that is used to generate an error signal, and the correction of the first coefficients using the error signal. See Figure 3, elements 396, 398, and 320. Therefore, claims 20, 45, and 46 are not in error.

7. Claims 1-44 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent No. 5,473,686 in view

of U.S. Patent No. 6,654,623. Claims 45 and 46 are also rejected under in view of U.S. Patent Nos. 5,473,686 and 6,654,623.

Applicant respectfully submits that Examiner's cited references do not collectively disclose applicant's inventions. Specifically, at least one embodiment of the applicant's claimed inventions is directed toward the derivation of a subset of a first set of coefficients, the use of that subset to derive a signal used to generate an error signal and the correction of the first set of coefficients using the error signal. Claim 1 has been amended to clarify this novel element. The '686 and '623 patents, in combination, do not teach the use of a second set of coefficients, derived from a first set using a threshold value, to modify a signal, generate an error signal, and correct the first set of coefficients.

Applicant believes that it has satisfactorily addressed the bases underlying the Examiner's objections and rejections. Applicant therefore submits the present application is in form for allowance.

Respectfully submitted,



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